

REMARKS

Claims 1-13 are pending in the application. Claims 1, 5 and 8 have been amended.

Reconsideration of the rejections and allowance of the pending application in view of the foregoing amendments and following remarks are respectfully requested.

In the Office Action of August 23, 2004, claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Choi, U.S. Patent No. 6,394,754 (hereinafter Choi), and claims 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi in view of Min et al., U.S. Patent No. 6,287,078 (hereinafter Min). These rejections are respectfully traversed.

Claims 1, 5 and 8 have been amended to more clearly define the features of the invention. No new matter is believed to be introduced by the present amendment.

It is an object of the present invention to provide a cool air circulation type axial flow fan for a refrigerator in which several important design factors, such as the number of blades, a sweep angle of each of the blades, etc., of the fan can be optimally determined to create a sufficiently strong cool air flow suitable for a large pressure loss occurring across a complex flow channel in the refrigerator, and to reduce noise.

To achieve the above-noted object, a cool air circulation type axial flow fan that circulates cool air in a refrigerator the present invention, as recited in amended claim 1, includes, inter alia, a hub connected to a motor via a rotating shaft of the motor, and

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a plurality of spaced blades mounted on the outer circumference of the hub. Furthermore, the number of the blades is set to between 6 and 8, and each of the blades has a sweep angle of between 50 and 65 degrees.

Applicants respectfully submit that the references relied upon in the rejections under 35U.S.C. 102(b) and 103(a), considered singly or in any proper combination, do not disclose such a combination of features.

Contrary to the Examiner's statements in the paragraph spanning pages 4 and 5 of the Office Action, the Choi reference refers to and is concerned specifically with an axial flow fan having 3 blades, each of the blades having a sweep angle of 0.0° to 37.0° or 37.0° to 49.5° as disclosed in Fig.7 and the description of col. 5, lines 10-16 thereof.

In contrast, in the present invention, as explained above, the number of the blades is set to between 6 and 8, and each of the blades has a sweep angle of between 50 and 65 degrees, and thus the fan creates a sufficiently strong cool air flow suitable for a large pressure loss occurring across a complex flow channel in the refrigerator and reduces noise as disclosed in Figs. 6 and 7. The Choi reference at least does not disclose this feature. Also, the secondary Kim reference does not teach the feature of the present invention.

Thus, Choi does not disclose each and every element of applicants' claimed invention, and thus does not anticipate the present invention as recited in claim 1.

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Furthermore, even assuming, arguendo, that the teachings of Choi and Kim can be properly combined, the asserted combination of Choi and Kim would not result in the invention as recited in claim 1.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based on prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to be attached thereto.

In the Official Action, the drawings have been objected to because rotational direction has not on any of the drawings and shaft has not been labeled, and the drawings have also been objected to under 37CFR1.83(a) because the rake angle (r) is not shown in the drawings.

By the present Response, the drawings have been amended to label the rotational direction of the fan and the rotating shaft 20 therein, and claim 8 and the specification have been amended to correct the rake angle (r). It is respectfully requested, therefore, that the objection to the drawings be withdrawn.

Independent claim 1 is now in condition for allowance in view of the amendments and the above-noted remarks. Dependent claims 2-13 are also submitted to be in condition for allowance in view of their dependence from the allowable base claims and also at least based upon their recitations of additional features of the present invention. It

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is respectfully requested, therefore, that the rejections under 35 U.S.C. 102(b), 35 U.S.C. 103(a) be withdrawn and that an early indication of the allowance thereof be given.

Based on the above, it is respectfully submitted that this application is now in condition for allowance, and a Notice of Allowance is respectfully requested.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Young Gyu JUNG et al.

Will E. Lytle Reg. No.
Bruce H. Bernstein 41,568
Reg. No. 29,027

Attachment: 1 Replacement Sheet

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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191

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IN THE DRAWINGS

The attached sheet of drawings, which includes Fig. 4, replaces the original sheet including Fig. 4. In amended Fig. 4, the rotational direction of the fan and the rotating shaft 20 have been labeled.

Attachment : Replacement Sheet (1)